

REMARKS

Claims 13, 15 through 17, 19 and 20 are canceled without prejudice. Claim 1 is amended and new Claim 21 is added. Thus, by this Amendment, Claims 1, 3 through 12 and 21 are presented for examination.

The Examiner has again rejected all claims of the application. Claims 1 through 3, 5, 7 through 9, 11, 13, 14, and 17 through 19 are rejected as allegedly anticipated by the United States patent of Paquet et al. while Claims 4, 6, 10, 12, 15, 16 and 20 are rejected as allegedly rendered obvious by Paquet et al. in view of the United States patent of Hoffman et al. In view of the amendments made to the claims and the remarks that follow it shall become apparent that the pending rejections are now inapplicable.

Applicant's invention, as now more specifically defined, is directed to a structure mechanism that for achieving a result that is neither taught nor suggested by either of the references upon which the Examiner relies. That is, as defined in Claim 1 and the claims that rely thereupon, the invention is directed to apparatus for linearly slewing a device within a two axis system.

Paquet et al. is directed to a rebalance loop that

enhances the accuracy of measurement of a closed-loop gyro.

Paquet et al. makes no reference to the slewing of a gyro nor to the problems associated therewith. Rather, it is directed to enhancing the accuracy of measurement by introducing cross-axis corrections.

Applicant's invention is not directed to rate measurement. Rather, it is directed to an apparatus for overcoming a problem that is introduced by the presence of a gyro rotor in a system, such as a camera, in which stable (linear) back-and-forth slewing or scanning motion is desired. Such slewing, without Applicant's invention would otherwise be hampered by the occurrence of undesired coning this will produce coning of the line of sight.

Such harmful coning is eliminated in Applicant's invention by applying an off-axis signal that generates exactly the torque required to null the undesired cross-axis motion otherwise resulting from the inertia of the rotor. Such off-axis signal is the derivative of the oscillatory input slewing signal applied.

Neither Paquet et al. nor Hoffman refers to slewing of a device within a two-axis system such as a gimbal. Rather, each addresses the issue of rate measurement with a gyro that includes

a rebalance loop. The application of such references to Applicant's apparatus represents an extension of the teachings of each that cannot be justified by the teachings of either one. As stated in In re Dembiczak, 50 U.S.P.Q. 2d 1614, 1620 (Fed. Cir. 1999), "Because there is no evidence in the record of a suggestion, teaching or motivation to combine the prior art references asserted against the pending claims, the obviousness rejections are reversed."

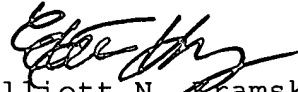
The Examiner has failed to address the claimed invention. By focusing upon principles of gyro operation, the Examiner overlooks the fact that it is the presence of the gyro in the system defined by the apparatus of the invention that results in the problem itself, namely coning in a gyro-fixed device that is movable within a two degree-of-freedom system.

Claim 1 and the claims that depend therefrom are directed to apparatus for linearly slewing a device. Among other limitation, such device is fixed to a gyro within a two axis system. Neither of the references relied upon by the Examiner teaches a device fixed to a gyro within a two axis system. Furthermore, neither reference in any addresses the solution of the problem of coning motion in the presence of slewing or back-and-forth scanning of such a device within a gimballed system. The fact that each addresses improvements in the design of a

rebalance loop for a gyro in no way implies a solution to the problem addressed by the claimed invention as it is the presence of such rebalance loop control of the rotor of the gyro that leads to the problem of such coning.

For the foregoing reasons, all presently-pending claims define structures that are neither taught nor rendered obvious by the art of record. Prompt allowance and issuance of all pending claims are therefore earnestly solicited.

Respectfully submitted,



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